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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,591	10/28/2003	Paul Jayachandran Joseph	62020-1560	5369

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EXAMINER

CULBERT, ROBERTS P

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/695,591

Applicant(s)

JOSEPH ET AL.

Examiner

Roberts Culbert

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 1-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/2/04, 2/25/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Claims 1-17 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 7/25/05.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 18-23 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 6,096,656 to Matzke et al.

Regarding Claim 18, Matzke et al. teach a method of fabricating a microstructure comprising: providing a substrate (18) having a sacrificial polymer layer (32) disposed thereon; disposing a framing material (20) onto at least a portion of the sacrificial polymer layer; and disposing an overcoat layer (36) onto the framing material, wherein the framing material substantially separates the sacrificial polymer layer from the overcoat layer.

Regarding Claim 19, Matzke teaches removing the sacrificial layer to define an air-region within the overcoat layer, the framing material engaging at least a portion of the air-region on an inside surface of the framing material and engaging the overcoat layer on an outside surface of the framing material.

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Regarding Claim 20, Matzke et al. teach the overcoat layer is selected from polyimides, polynorbornenes, epoxides, polyarylenes ethers, parylenes, inorganic glasses, and combinations thereof. (Col. 9, Line 60 – Col. 10, Line 2)

Regarding Claim 21, Matzke et al. teach the framing material is selected from SiO₂, Si₃N₄, SiO_xN_y (where x is from 0.01 to 2 and y is from 0.01 to 1.33), and Al₂O₃. (Col. 8, Lines 45-59)

Regarding Claim 22, Matzke et al. teach the sacrificial layer polymer is selected from polyimides, polynorbornenes, epoxides, polyarylenes ethers, polyarylenes, inorganic glasses, and combinations thereof. (Col. 9, Lines 4-8)

Regarding Claim 23, Matzke et al. teach a method for fabricating a microstructure, comprising: providing a structure having a substrate, an overcoat layer, a sacrificial polymer layer in an area within the overcoat layer, and a framing material between at least a portion of the sacrificial polymer layer and the overcoat layer; and removing the sacrificial polymer layer to form an air-region within the area defined by the sacrificial material.

Claims 18-24 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,599,436 to Matzke et al.

Regarding Claim 18, Matzke et al. teach a method of fabricating a microstructure comprising: providing a substrate (12) having a sacrificial polymer layer (36) disposed thereon; disposing a framing material (38) onto at least a portion of the sacrificial polymer layer; and disposing an overcoat layer (the overcoat layer reads on the silicon dioxide barrier described at Col. 8, Lines 12-16 and/or the additional layer described at Col. 9, Lines 49-52) onto the framing material, wherein the framing material substantially separates the sacrificial polymer layer from the overcoat layer.

Regarding Claim 19, Matzke teaches removing the sacrificial layer (36) to define an air-region within the overcoat layer (Figure 3I), the framing material engaging at least a portion of the air-region on an inside surface of the framing material and engaging the overcoat layer on an outside surface of the framing material.

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Regarding Claim 20, Matzke et al. teach the overcoat layer is selected from polyimides, polynorbornenes, epoxides, polyarylenes ethers, parylenes, inorganic glasses, and combinations thereof.

Regarding Claim 21, Matzke et al. teach the framing material is selected from SiO₂, Si₃N₄, SiO_xN_y (where x is from 0.01 to 2 and y is from 0.01 to 1.33), and Al₂O₃. (Col. 8, Line 60 – Col. 9, Line 6)

Regarding Claim 22, Matzke et al. teach the sacrificial layer polymer is selected from polyimides (Col. 7, Lines 1-5), polynorbornenes, epoxides, polyarylenes ethers, polyarylenes, inorganic glasses, and combinations thereof. (Col

Regarding Claim 23, Matzke et al. teach a method for fabricating a microstructure, comprising: providing a structure having a substrate (12), an overcoat layer (Col. 8, Lines 12-16 and/or Col. 9, Lines 49-52), a sacrificial polymer layer in an area within the overcoat layer, and a framing material (38) between at least a portion of the sacrificial polymer layer and the overcoat layer; and removing the sacrificial polymer layer (36) to form an air-region within the area defined by the sacrificial material.

Regarding Claim 24, Matzke et al. inherently teaches that the polymer sacrificial layer is solvent-incompatible with the overcoat since the solvent in the sacrificial polymer removal step removes only the sacrificial layer. Further, since Matzke et al. suggests widely different materials with respect to solvency (glass, plastic, metal) for the sacrificial layers and overcoat the different materials are clearly "solvent incompatible" as broadly claimed by applicant.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberts Culbert whose telephone number is (571) 272-1433. The examiner can normally be reached on Monday-Friday (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

R. Culbert



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